



U.S. Department  
of Transportation  
**Research and  
Special Programs  
Administration**

400 Seventh St., S.W.  
Washington, D.C. 20590

**OCT 18 2001**

DOT-E 10887  
(THIRD REVISION)

**EXPIRATION DATE: September 30, 2003**

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: The National Aeronautics and Space  
Administration (NASA)  
Washington D. C.
2. PURPOSE AND LIMITATION:
  - a. This exemption authorizes the transportation in commerce of dinitrogen tetroxide in specially designed DOT Specification 51 portable tanks. This exemption provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein.
  - b. The safety analyses performed in development of this exemption only considered the hazards and risks associated with transportation in commerce.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 172.101 Column (8C) in that DOT 51 Portable tanks are not authorized, except as specified herein.
5. BASIS: This exemption is based on the application of NASA dated September 27, 2001, submitted in accordance with § 107.109.
6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous materials description -- proper shipping name	Hazard Class/ Division	Identi- fication Number	Packing Group
Dinitrogen tetroxide	2.3	UN1067	N/A

7. SAFETY CONTROL MEASURES:

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a. Packaging prescribed is a Generic Propellant Transfer Unit (GPTU) which consists of a DOT 51 portable tank of double-walled design (jacketed pressure vessel), constructed in accordance with the ASME Code for lethal service, and having a water capacity of 550 gallons. The design, designated Model No. PT-5-GPTU, is described in Lox Equipment Company engineering documents, submitted with and forming a part of the application, as follows:

- (1) Technical Data Sheet for Model PT-5-GPTU,
- (2) Drawing No. A-50703, GPTU Fluid System Schematic,
- (3) Drawing No. D-50077, Rev. 4, General Arrangement, and
- (4) Drawing No. D-50078, Rev. 2, Inner Vessel Arrangement.

b. Packaging must meet all criteria specified in the application, including the following safety control measures:

- (1) The protective housing must be arranged so that the cover will not close unless inlet and outlet valves are in the "shut off" position. The manway cover must have a burst disk rated at 15 psig to protect the housing from overpressurization.
- (2) The inner pressure vessel safety relief valve system must consist of an isolation ball valve, a rupture disk and a relief valve mounted in series. The isolation valve must be mechanically locked in the "open" position during transport. The relief valve must be set to begin opening at the MAWP of the vessel.
- (3) Each GPTU must have a water capacity of 550 gallons (maximum). The maximum filling density must be limited to 91 percent of the water volume.

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8. SPECIAL PROVISIONS:

a. Each operation transporting dinitrogen tetroxide outside the confines of the Kennedy Space Center and Cape Canaveral Air Force Station (KSC/CCAFS) must be conducted fully in accordance with the requirements of the NASA "Generic Propellant Transfer Unit (GPTU) Portable Tank Emergency Response Plan For Inhalation Hazards" submitted as part of the application.

b. Shipments must be made only within 25 miles of the KSC/CCAFS boundaries.

c. The package must be marked "INHALATION HAZARD" in letters at least 2 inches in height on at least 2 opposite sides, and must be marked on these same sides, in letters at least 2 inches in height on a contrasting background "DOT-E 10887."

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle.

10. MODAL REQUIREMENTS: A current copy of this exemption must be carried aboard each motor vehicle used to transport packages covered by this exemption.

11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this exemption and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:

- o All terms and conditions prescribed in this exemption and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
- o Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this exemption must receive training on the requirements and conditions of this exemption in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this exemption, including display of its number, when the exemption has expired or is otherwise no longer in effect.

12. REPORTING REQUIREMENTS: The carrier is required to report any incident involving loss of packaging contents or packaging failure to the Associate Administrator for Hazardous Materials Safety (AAHMS) as soon as practicable. (Sections 171.15 and 171.16 apply to any activity undertaken under the authority of this exemption.) In addition, the holder(s) of this exemption must inform the AAHMS, in writing, of any incident involving the package and shipments made under the terms of this exemption.

Issued in Washington, D.C.:



Robert A. McGuire  
Associate Administrator  
for Hazardous Materials Safety

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(DATE)

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Research and Special Programs Administration, Department of Transportation, Washington, D.C. 20590. Attention: DHM-31.

The original of this exemption is on file at the above office. Photo reproductions and legible reductions of this exemption are permitted. Any alteration of this exemption is prohibited.

Copies of exemptions may be obtained from the AAHMS, U.S. Department of Transportation, 400 7th Street, SW, Washington, DC 20590-0001, Attention: Records Center, 202-366-5046

PO: sln